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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/107,684	06/30/1998	STEVEN M. BLUMENAU	E0295/7040-R	8390

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RICHARD F GIUNTA
WOLF GREENFIELD & SACKS
FEDERAL RESERVE PLAZA
600 ATLANTIC AVENUE
BOSTON, MA 022102211

EXAMINER

ENCARNACION, YAMIR

ART UNIT	PAPER NUMBER
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2186

DATE MAILED: 04/30/2003

28

Please find below and/or attached an Office communication concerning this application or proceeding.

pp4

Office Action Summary	Application No. 09/107,684	Applicant(s) BLUMENAU ET AL.	
	Examiner Yamir Encarnacion	Art Unit 2186	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-49 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Objections

1. Claim 31 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of claim 30. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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Claim Rejections

3. Claims 1-6, 8-17, and 19-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Starek* (USPN: 5,991,778) in view of *Rao* (USPN: 5,920,733).

Claimed	<i>Starek</i>
21. In a computer system including a storage system and a host computer coupled thereto, the storage system including a cache memory and at least one storage device,	<i>Starek</i> describes a personal computer including a storage device such as a hard disk drive, a ZIP drive, a floppy drive, tape drive, writeable CD ROM drive. See column 3, lines 1-14. Column 4, line 38 mentions disk caches.
a method of writing information to a logical object of the host computer, the method comprising, in response to a communication received from the host computer, acts of:	<i>Starek</i> describes a method of writing information to a file (which reads on the claimed "logical object") in response to a communication from an application in response to a communication received from the application.

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(A) generating, [within the storage system], data that is independent of any data passed from the host computer to the storage system to be written to a plurality of storage locations on the at least one storage device corresponding to the logical object of the host computer; and	When deleting a file, the driver within the operating system described by <i>Starek</i> generates a specified overwrite array. Column 5, lines 33-36 explains that the “specified array can be any desired pattern of characters or data and can be user defined or default to a pre-defined pattern.” See also, column 5, lines 42-48.
(B) writing the generated data to only the plurality of storage locations corresponding to the logical object.	See figure 4, step 38.

In *Starek* the host generates the data to be written to the file that is to be securely deleted. Stated otherwise, the storage device described in *Starek* does not generate the data to be written to the file that is to be securely deleted.

Rao explains that disk drive controllers like the one described by *Starek* are fairly unintelligent and do not perform functions without being commanded by a host computer. See *Rao* column 1, lines 20-24. *Rao* further explains that the functions performed within the host computer to control the disk drive prevent the host computer from performing other tasks. See *Rao*, column 1, lines 25-27. In order to provide an improvement over unintelligent disk drive

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controllers such as the one used by *Starek*, *Rao* suggests of modifying disk drives so as to allow them to execute activities that would have been performed by then host when connected to an unintelligent disk drive. The modified disk drives suggested by *Rao* free the host computer to perform other activities. See *Rao*, column 1, lines 58-61. In view of *Rao*, it would have been obvious to a person of ordinary skill in the art to off-load the secure delete method described by *Starek* from the host to an intelligent disk drive like the one described by *Rao* for the purpose of freeing the host computer to perform other activities.

As to claim 22, see *Rao*, figure 2, the controller board 202.

As to claim 27, see *Starek*, column 4, lines 21-22 describing of the translation of a logical request to a physical sector request.

As to claim 28, see the comments for claim 21 and 27 above.

As to claim 29, the combination meets the limitation of the claim.

As to claims 30-33, see *Starek's* figure 2 and column 3, lines 32-44.

As to claim 34, the combination would have met the limitation of the claim because the mapping information would have been located on the host side and the intelligent disk drive would have had to obtain the physical locations of the storage locations storing a desired file.

As to claims 35-36, the combination meets the limitation of the claim.

As to claim 37, while not clearly explained by the combination, it would have been obvious to those of ordinary skill in the art that files were fragmented in the environment

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described by the combination. Secure deletion of fragmented files would have met the limitation of the claim.

As to claim 38, *Starek* mentions RAID on column 4, lines 39-40. A stripped volume would have met the limitation of the claim.

As to claim 39, see the comments for claim 37 and 38.

As to claim 40, see the comments for claim 37.

As to claims 41-42, see the comments for claim 34.

As to claim 43, see the comments for claim 35 above.

As to claim 44, see the comments for claim 36 above.

As to claim 45, see the comments for claim 37 above.

As to claims 46-47, see the comments for claim 38 above.

As to claim 48, see the comment for claim 37 above.

As to claim 49, the combination meets the limitation of the claim.

As to claim 1, see the comments for claims 36-37 above.

As to claim 2, see the comments for claim 22 above.

As to claim 3, see the comments made for claims 21-22. Note the specified array.

As to claim 4-6, see the comments made for claim 38 above.

As to claim 8, see the comments for claim 4, 5, and 21 above.

As to claim 9, see the comments for claim 4, 5, and 3 above.

As to claim 10, see *Rao*, figure 4, the processing circuitry 230.

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As to claim 11, see the comments for claim 6 above.

As to claim 12, see the comments for claim 1 above.

As to claim 13, see the comments for claim 2 above.

As to claim 14, see the comments for claim 3 above.

As to claim 15, see the comments for claim 4 above.

As to claim 16, see the comments for claim 5 above.

As to claim 17, see the comments for claim 6 above.

As to claim 19, see the comments for claim 8 above.

As to claim 20, see the comments for claim 9 above.

As to claim 23, see the comments for claim 5 above.

As to claim 24, see the comments for claim 21 above.

As to claim 25, see the comments for claim 23 above.

As to claim 26, see the comments for claim 24 above.

4. Claims 7 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over *Starek/Rao* as applied to claim 4 and 15 above, and further in view of the MS-DOS Del command (MS-DOS User's Reference, Microsoft Corporation, 1987, pp. 56).

The *Starek/Rao* combination does not explicitly describe a single command separately identifying two storage locations.

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As explained in the MS-DOS User's Reference, the MS-DOS delete command could be used to delete "more than one file at a time" by allowing for multiple files to be specified for deletion via the single command.

A person of ordinary skill in the art would have found it obvious to implement a delete command capable of deleting more than one file at a time like the one described by the MS-DOS reference for the purpose of gaining increased flexibility over say a delete command that allowed only for one file to be deleted at a time. Accordingly, a person of ordinary skill in the art would have found it obvious to modify the delete command in the *Starek/Rao* combination (if such a modification was needed) so as to allow for more than one file to be deleted at one time for the purpose of achieving increased flexibility.

The examiner notes that the environment in *Starek* is disclosed to be Windows 95. While not explained by *Starek*, Windows 95 is built "on top" of MS-DOS. Because MS-DOS is a subset of Windows 95, Windows 95 incorporates a Delete command analogous to the MS-DOS delete command.

Response to Arguments

5. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

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Conclusion

Any inquiry concerning this or an earlier communication from the Examiner should be directed to Yamir Encarnacion by phone at (703) 308-5466.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew Kim, can be reached on (703) 305-3821.


Any formal response to this action intended for entry should be mailed to Commissioner of Patents and Trademarks, Washington, D.C. 20231 or faxed to (703) 746-7239 and labeled "FORMAL" or "OFFICIAL." Any informal or draft communication should be faxed to (703) 746-7240 and labeled "INFORMAL" or "UNOFFICIAL" or "DRAFT" or "PROPOSED" and followed by a phone call to the Examiner at the above number. Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington. VA., Sixth Floor (Receptionist).

YEE

Yamir Encarnacion

Patent Examiner

April 28, 2003


MATTHEW KIM
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100